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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,095	01/15/2002	Keita Suzuki	011719	4433
23850	7590	12/22/2004		
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			EXAMINER PATTERSON, MARC A	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/030,095

Applicant(s)

SUZUKI, KEITA

Examiner

Marc A Patterson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-8, 11-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-8, 11-13 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**  
**WITHDRAWN REJECTIONS**

1. The 35 U.S.C. 103(a) rejection of Claims 4 – 6 and 11 – 12 as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478), of record on page 3 of the previous Action, is withdrawn.

The 35 U.S.C. 103(a) rejection of Claims 7 – 8 as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478) and further in view of Yokoe et al (U.S. Patent No. 5,919,326), of record on page 4 of the previous Action, is withdrawn.

**NEW REJECTIONS**

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Hunter (U.S. Patent No. 5,891,373).

With regard to Claim 13, Hunter discloses a multi – layer resin tube used as a fuel tube for automobiles (column 1, lines 8 – 20) comprising a body layer of a thermoplastic resin (outer layer; column 2, lines 6 – 19) comprising polyamide (column 2, lines 12 – 14) and a layer provided on an inner surface of the body layer (multi – layer adhesive layer; column 2, lines 30 – 53) comprising an outermost layer attached to the inside surface of the body layer (column 2,

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lines 20 – 29) and an innermost layer including the inside surface of the multi – layer resin tube (it is bonded directly to, and therefore includes, the layer which comprises the inside surface of the tube; column 2, lines 35 – 53); Hunter discloses that the innermost and outermost layers comprise both (mixtures thereof; column 2, lines 24 – 25) a component consisting of polyvinylidene fluoride and a component consisting of polyvinyl fluoride (column 2, lines 20 – 29); the outermost layer has one component at a higher concentration than the innermost layer and the other component at a lower concentration than the innermost layer; column 2, lines 27 – 29 and 47 – 53); the tube therefore comprises two layers each comprising two adhesive components, with one adhesive component present in a plurality of gradient layers at a concentration that decreases in each sequential layer from the outermost gradient layer having a highest concentration to an innermost layer having a lowest concentration of the adhesive component. Hunter fails to disclose adhesive layers which are barrier layers; Hunter also discloses that fluorinated hydrocarbon layers are barrier layers (column 1, lines 21 – 23); the disclosed layers are therefore barrier layers.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 – 6, 11 – 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478).

With regard to Claims 4 and 15, Hunter discloses a multi – layer resin tube used as a fuel tube for automobiles (column 1, lines 8 – 20) comprising a body layer of a thermoplastic resin (outer layer; column 2, lines 6 – 19) comprising polyamide (column 2, lines 12 – 14) and a layer provided on an inner surface of the body layer (multi – layer adhesive layer; column 2, lines 30 – 53) comprising an outermost layer attached to the inside surface of the body layer (column 2, lines 20 – 29) and an innermost layer including the inside surface of the multi – layer resin tube (it is bonded directly to, and therefore includes, the layer which comprises the inside surface of the tube; column 2, lines 35 – 53); Hunter discloses that the innermost and outermost layers comprise both (mixtures thereof; column 2, lines 24 – 25) a component consisting of polyvinylidene fluoride, which is a fluorine resin, and a component consisting of a blend of a fluoropolymer and nylon, the fluoropolymer comprising ethylene tetrafluoroethylene (column 2, lines 20 – 29); the nylon is added to the fluoropolymer to obtain superior adhesion to the body layer than if the layer were fluoropolymer alone (added polyamide to promote adhesion with the nylon outer layer; column 2, lines 43 – 45) and the blend of fluoropolymer and nylon is therefore a modified fluorine resin; the outermost layer has one component at a higher concentration than the innermost layer and the other component at a lower concentration than the innermost layer (the nylon component; column 2, lines 27 – 29 and 51 – 53); the tube therefore comprises two layers each comprising two adhesive components, with one adhesive component present in a plurality of gradient layers at a concentration that decreases in each sequential layer from the outermost gradient layer having a highest concentration to an innermost layer having a lowest concentration of the adhesive component. Hunter fails to disclose adhesive layers which are barrier layers.

Spohn teaches the use of a layer comprising fluoropolymer and nylon (column 2, lines 18 – 49) which is a barrier layer (column 4, lines 5 – 18) for the purpose of making a fuel hose which is resistant to chemical attack (column 5, lines 35 – 44). Therefore one of ordinary skill in the art would have recognized the advantage of providing for innermost and outermost layers having the barrier properties of Spohn in Hunter, which is a fuel hose, depending on the desired resistance to chemical attack of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for an innermost and outermost layers which are barrier layers in Hunter (therefore a multi – layer barrier comprising two barrier components) in order to make a fuel hose which is resistant to chemical attack as taught by Spohn. Hunter would therefore comprise two layers each comprising two barrier components, with one barrier component present in a plurality of gradient layers at a concentration that decreases in each sequential layer from the outermost gradient layer having a highest concentration to an innermost layer having a lowest concentration of the barrier component.

With regard to Claims 5 – 6, Hunter discloses the addition of ethylene tetrafluoroethylene to the modified ethylene tetrafluoroethylene (added ETFE; column 2, lines 51 – 53) and therefore discloses a barrier component that is an ethylene – tetrafluoroethylene and an adhesive that is a modified ethylene – tetrafluoroethylene.

With regard to Claims 11 – 12, Hunter fails to disclose an outermost layer having the barrier component at 1 – 10% by weight and innermost layer having the adhesive component at 0.5 to 3% by weight. However, Hunter discloses an outermost layer having the barrier component at 40% by weight and innermost layer having the barrier component at greater than

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40% by weight (column 2, lines 20 – 29) and teach the use of the layer to obtain improved adhesion (column 3, lines 25 – 26). Therefore, one of ordinary skill in the art would have recognized the utility of varying the concentrations of the components in the layers to obtain a desired adhesion. Therefore, adhesion would be readily determined through routine optimization of concentrations of the components in the layers by one having ordinary skill in the art depending on the desired end use of the product.

It therefore would be obvious for one of ordinary skill in the art to vary the concentrations of the components in the layers in order to obtain a desired adhesion, since the adhesion would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Hunter.

6. Claims 7 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478) and further in view of Yokoe et al (U.S. Patent No. 5,919,326).

Hunter and Spohn disclose a fuel hose comprising a barrier layer as discussed above. With regard to Claims 7 – 8, Hunter and Spohn fail to disclose a barrier layer comprising conductive carbon black.

Yokoe et al teach the use of a barrier layer comprising conductive carbon black in a fuel hose (column 5, lines 19 – 35) for the purpose of obtaining a hose which dissipates static charge (column 5, lines 19 – 35). The advantage of providing for the conductive carbon black of Yokoe et al in Hunter and Spohn, which is a fuel hose, would therefore be obvious to one of ordinary skill in the art depending on the desired static charge dissipation of the end product.

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It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a barrier layer comprising conductive carbon black in Hunter and Spohn in order to obtain a hose which dissipates static charge as taught by Yokoe et al.

#### ANSWERS TO APPLICANT'S ARGUMENTS

7. Applicant's arguments regarding the 35 U.S.C. 103(a) rejection of Claims 4 – 6 and 11 – 12 as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478) and 35 U.S.C. 103(a) rejection of Claims 7 – 8 as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478) and further in view of Yokoe et al (U.S. Patent No. 5,919,326) and objection to new matter in the specification, of record in the previous Action, have considered and have been found to be persuasive. The rejections are therefore withdrawn. The new 35 U.S.C. 102(b) rejection of Claim 13 as being anticipated by Hunter (U.S. Patent No. 5,891,373), 35 U.S.C. 103(a) rejection of Claims 4 – 6, 11 – 12 and 15 as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478) and 35 U.S.C. 103(a) rejection of Claims 7 – 8 as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478) and further in view of Yokoe et al (U.S. Patent No. 5,919,326) above are directed to amended Claims 4 – 8, 11 – 13 and 15.



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8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

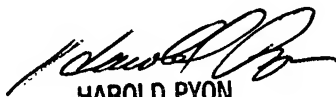
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### *Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (571) 272 – 1497. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571) 272 – 1498. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

*Marc Patterson*  
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HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
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*12/21/04*